

Estimates of the attenuation in the Philippine Sea Plate slab using Strong Motion data from the 2001 Geiyo Earthquake

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The intensity distribution of the 2001 Geiyo earthquake shows an asymmetric pattern that is elongated toward the east. This effect may be due to the lower values of attenuation for waves that travel through the Philippine Sea plate. In this study we look at profiles of strong-motion records of the mainshock to estimate the Q for a path through the subducting slab and a path that does not pass through the slab. We use the borehole data from KiKNet. The amplitudes of the strong motion data for the path along the subducting plate decay with distance much slower than the other path, indicating a higher value of Q . From the spectral amplitudes at 0.2 to 10 Hz, we estimate that the average Q of the subducting slab is three times that of the surrounding mantle.